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ABSTRACT

This guide for implementing interactive television in elementary and secondary schools begins by arguing that the introduction of interactive television requires school districts to cooperatively solve the challenges of multidistrict consortia and to develop policies and procedures to help implement the new delivery system. It is also noted that the teaching and learning process will require some adjustments because of the unique aspects of a technology which relies heavily on extremely sophisticated and complicated technical equipment. The guide then provides rationales and suggestions on six topics: (1) the policies and procedures; (2) inservice workshops for teachers and administrative staff; (3) instructional management strategies; (4) techniques for teaching on an interactive system; (5) classroom equipment requirements; and (6) classroom design. A diagram of an interactive television classroom is included. (GL)

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IMPLEMENTING INTERACTIVE TELEVISION

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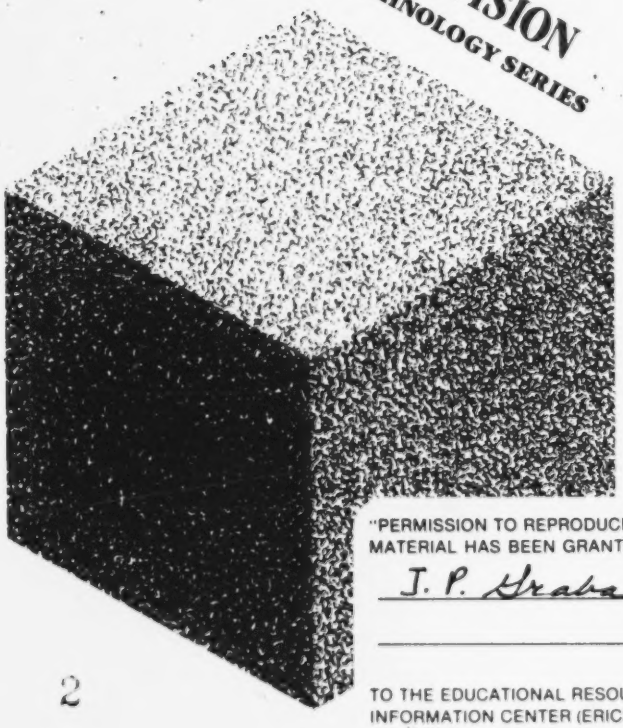

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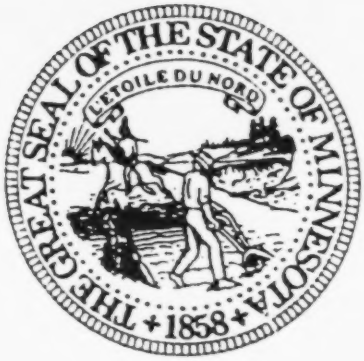

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INTERACTIVE TELEVISION CLASSROOM

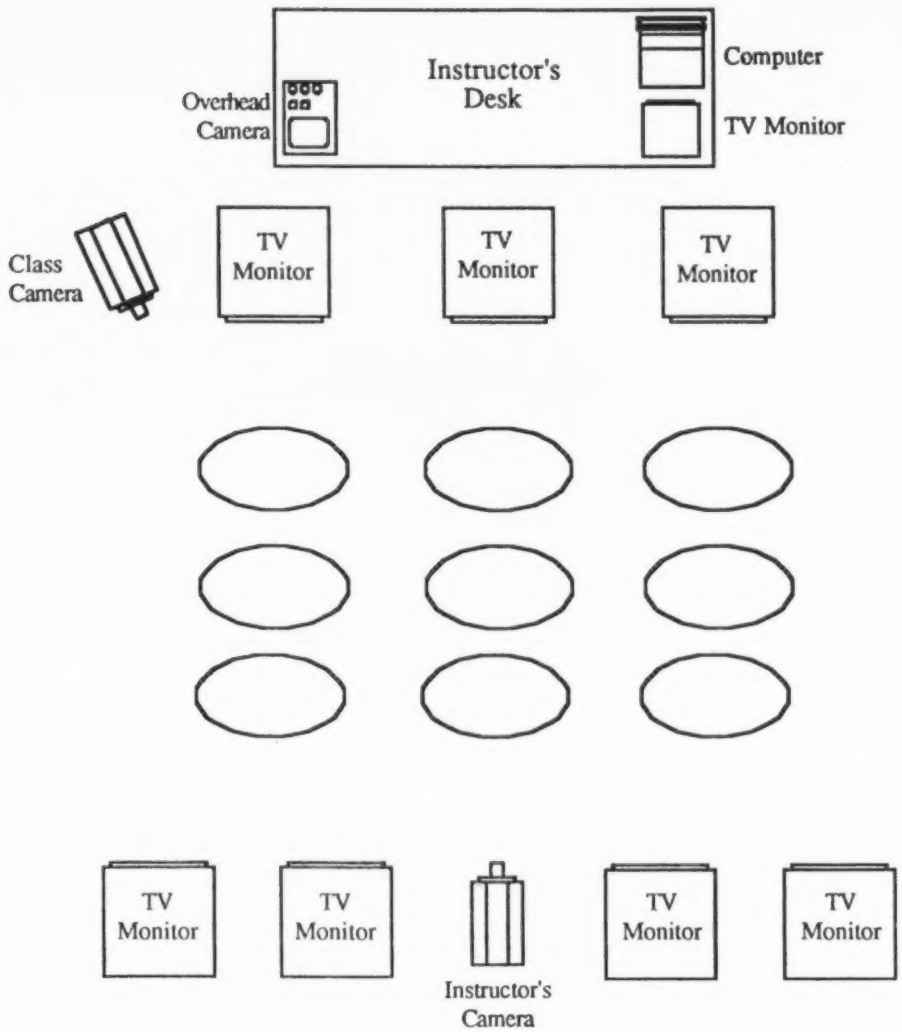
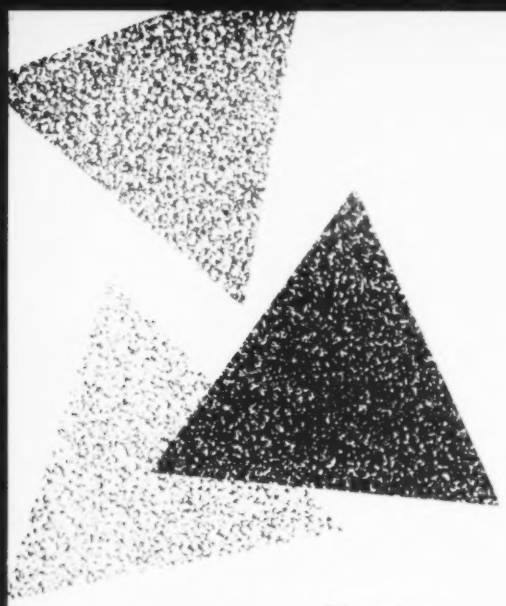


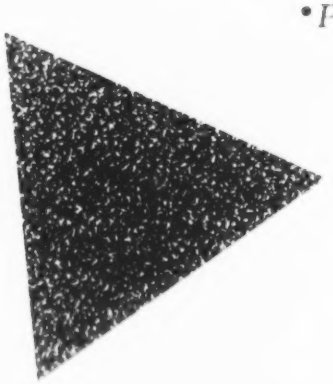
Figure 1



Chapter 1

IMPLEMENTING INTERACTIVE TELEVISION

- *Policies and Procedures*



POLICIES AND PROCEDURES

School districts will need to cooperatively solve the challenges of a multidistrict consortium and develop new policies and procedures to help implement the interactive television program. In view of this, the committee formulated statements (in the left margin) followed by suggestions and rationales.

Involve teachers in the development of policies and procedures for using the interactive television system.

SUGGESTIONS:

A. Teachers who teach on the system must be represented on the board of directors.

B. Teachers must be involved from the initial planning stages.

C. Time must be provided for regularly scheduled appointments.

RATIONALE:

Teacher involvement will foster a sense of pride and ownership in the system and help avoid potential conflicts.

Involve teachers in adopting policies, limiting the number of students at remote sites.

RATIONALE:

Camera capabilities limit the number of students clearly visible at remote sites (eight or nine students recommended). Monitoring three student sites at one time appears to be a comfortable arrangement for teachers, but the number of remote sites that can be effectively handled may vary, depending on the teacher, the subject matter and the individual students involved.

Limiting numbers of students in a class and number of sites enhances student participation and teacher effectiveness. Overcrowding may encourage inappropriate student behavior (cheating, insubordination, etc.).

Encourage the involvement of teachers during registration of students in interactive television courses.

SUGGESTIONS:

A. Prerequisites must be clearly identified and thoroughly understood by individuals responsible for student scheduling and counseling.

B. A brief, accurate description of interactive television class expectations or exposure to an existing interactive television class should be provided for all students prior to final registration.

C. Interactive teachers should be made aware of special health and learning needs of registered students.

D. Pre-registration and registration procedures should be coordinated and consistent in all participating districts.

RATIONALE:

Interactive television courses are not for everyone. Students must be self-disciplined, motivated and mature.

Protect student rights to privacy.

SUGGESTIONS:

A. Supervisory monitors should be discretely placed so open viewing is not possible.

B. Signal scrambling should be considered to eliminate open community broadcasts.

RATIONALE:

Students may be required to forfeit some privacy to participate in an interactive television class. This must be explained at the outset and a parent sign-off sheet provided. Students and parents should be aware of the extent and nature of the interactive television broadcast (open or closed system).

Protection of student rights to privacy does not preclude the need of the teacher (even when at a remote school) to have all relevant information regarding the student.

Protect teacher rights to privacy.

SUGGESTIONS:

A. Scrambling capabilities for audio and video signals should be available.

B. Supervisory monitors should be discretely placed so open viewing is not possible.

RATIONALE:

Teachers may be more likely to participate on a closed system. Teachers and school districts should have the right to control the resources, strategies and content of the class. Occasional viewing of classes by the public may result in negative feedback because a lesson is viewed out of context.

Schedule parent-teacher conferences for all students.

SUGGESTIONS:

A. Conferences can be held via the interactive system if confidentiality is not essential.

B. Conferences can be scheduled between the teacher and parents at a common site as necessary.

C. Conferences can be held via the telephone.

RATIONALE:

Parents need to be kept informed about their child's progress regardless of the instructional delivery system used.

Parents should be exposed to the technology that is being used to deliver instruction to their child.

Parents may be reluctant to request a conference because the technology is intimidating and confusing to them.

Develop system-wide student discipline procedures.

RATIONALE:

Students in interactive television classes should expect consistent treatment for behavior problems.

Parents of students in interactive television classes should be aware of their child's decision to participate in the class and should be aware of the discipline procedure.

Administration must back teachers and be ready to act to remove the problem child after consulting with the teacher.

Encourage cooperation among districts to maximize time on task.

SUGGESTIONS:

A. School calendars should be as similar as possible among participating schools.

B. A common ending date for semesters should be identified to coordinate final testing.

C. Daily bell schedules must be coordinated. Intercom or public address system interruptions should be kept to a minimum and scheduled at the same time in the participating districts.

D. Notification of daily schedule changes (e.g., athletics, pep fests, lyceum, etc.) should be provided to remote site teachers.

E. Bulletins should be exchanged as necessary between districts to help teachers and students better prepare for interruptions.

RATIONALE:

Students and teachers need uninterrupted time to meet instructional objectives.

Management of remote students is improved when all pertinent schedule information is available.

Willing and effective teachers are needed to teach on the interactive television system.

SUGGESTIONS:

A. Every effort should be made to use volunteer teachers for interactive television.

B. Administrative personnel should encourage exceptional teachers to participate.

RATIONALE:

Volunteer teachers may be more enthusiastic and receptive to interactive television technology.

Teaching via television is a unique challenge and may not be appropriate for all teachers.

Personalize the interactive classes.

SUGGESTIONS:

A. Teachers should be encouraged to teach occasionally from remote sites. Substitute teacher pay and transportation money should be set aside for this purpose. Home site supervision should also be provided as necessary when the teacher travels to remote sites.

B. Teachers should have the opportunity to schedule a gathering (field trip) of all students involved in an interactive television class. This may involve transportation expenses.

C. Opportunities should be provided for private conferences and other necessary visits to remote sites .

RATIONALE:

The technology can be somewhat impersonal and get in the way of instruction.

Live student and teacher gatherings may help to establish a feeling that it truly is one class.

Develop procedures for conducting class in the event of technical failure.

SUGGESTIONS:

A. More than one person should be trained to troubleshoot problems as they occur.

B. A procedure to follow when the system is down should be written and adopted by participating schools.

RATIONALE:

Students, teachers and principals need to be informed about technical problems.

Supervision responsibilities may change when the system is down.

Instructional time will be salvaged if a good procedure is adopted.

Establish procedures for the exchange of written materials and assignments.

SUGGESTIONS:

A. Facsimile machines allow immediate hard copy transfer of materials.

B. Teachers or other individuals who regularly travel between districts may be used to deliver materials.

C. School buses that transport students between districts may be used to deliver materials.

D. The Postal Service may be used to exchange materials. Distinctive labeling will help identify mail for interactive classes.

E. Install standardized "in" and "out" bins for mail.

RATIONALE:

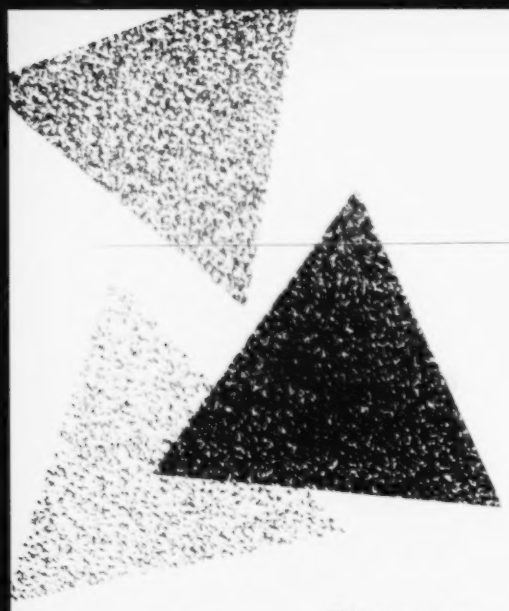
A standardized procedure for material exchange will help reduce frustration and delays in providing necessary academic feedback to students.

Establish procedures for completing lab work.

RATIONALE:

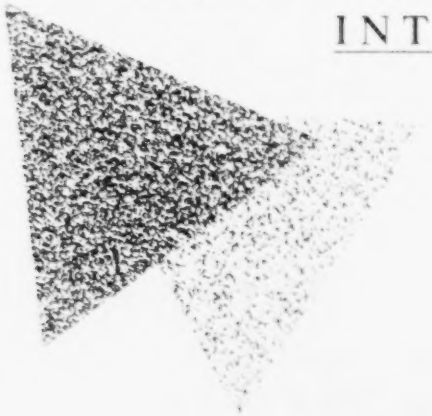
Some lab activities (science, agriculture, home economics) must be supervised. A special procedure may be necessary. Lab activities at a common site may help form a tighter classroom bond.

Essential lab activities should not be abandoned due to the technology.



Chapter 2

IMPLEMENTING INTERACTIVE TELEVISION



- *Inservice and Instruction*

INSERVICE AND INSTRUCTION

Teaching and learning via interactive television requires some adjustments on the part of both teachers and students. Teachers believe that inservice preparation for teaching on these systems is essential for success. Students and administrators must also be made aware of the unique aspects of the technology. In view of this, the committee formulated statements followed by suggestions and rationales.

Provide inservice for inexperienced and potential interactive television teachers.

SUGGESTIONS:

A. Experienced interactive classroom teachers within specific curriculum areas should be involved with the inservice training for new teachers.

B. Explanations of classroom equipment operation must be provided during the inservice.

C. Opportunities to use the classroom equipment to provide instruction must be provided during the inservice.

D. Methods of teaching that emphasize interaction (curriculum specific) must be identified and discussed.

E. Shared statewide inservice would provide continuity and consistency for all teachers trained in the state. Sharing inservice resource people would also be more cost effective.

F. Inservice training should last a minimum of 2-3 days.

G. Inservice training must include hands-on experience on an operational system.

RATIONALE:

The technology poses unique challenges to the teacher that traditional teacher training has not previously addressed.

Successful teaching methods identified and evaluated by experienced teachers can be demonstrated and taught. Teachers can learn/share most with teachers of similar disciplines.

Teachers must become "comfortable" with the technology so it does not get in the way of their teaching.

Some teachers may have to change their teaching methods to enhance student interaction and successfully use television capabilities.

Provide continuing inservice for interactive teachers.

SUGGESTIONS:

A. Provide time for visits to other interactive systems or attendance at appropriate workshops or seminars.

B. Provide opportunities to meet with experienced teachers within curriculum areas.

C. Conduct regular meetings within cooperatives to share mutual concerns.

RATIONALE:

Follow-up inservice to share ideas and discuss experience is essential for interactive teachers.

Collegial relationships both within the district and among teachers in different districts must be established.

Interactive teachers may not always be "accepted" by peers. Development of a support group may be necessary to these teachers.

Provide inservice for substitute teachers and principals who may be required to teach on the interactive system.

SUGGESTIONS:

A. Principals, local facilitators or experienced teachers should provide an abbreviated training session for substitute teachers.

B. Substitute teachers should be invited to attend the inservice training program for teachers.

RATIONALE:

Substitute teachers must be trained to effectively use the system for instruction.

Coordinate curriculum planning among school districts sharing courses.

SUGGESTIONS:

A. Accurate course descriptions with prerequisites identified must be distributed to each school participating in the project.

B. Teacher and curriculum coordinators from all cooperative schools should meet to discuss curriculum. Television instructors and traditional instructors must be included.

RATIONALE:

Time for teachers to redesign existing curriculum materials for interactive television may be necessary. New materials and teaching strategies may be required.

If the interactive television course is part of a sequence, prerequisites must be established and the content of those prerequisites standardized (e.g., math, world languages).

Provide orientation for students enrolled in interactive television

RATIONALE:

Students must be aware of the unique expectations or responsibilities created by the technology. For example:

- *Makeup work procedures*
- *Procedures for equipment use*
- *Active participation expectations*
- *Classroom discipline procedures*

Students will need to be briefly inserviced on the use of the classroom equipment. At the remote sites, the students are the only immediate contacts for equipment adjustments.

Establishing procedures for reviewing curriculum and evaluating teaching.

SUGGESTIONS:

A. Teachers, principals and curriculum directors should jointly determine evaluation procedures and criteria.

B. Evaluations should be completed early enough in the academic year to benefit both teacher and students.

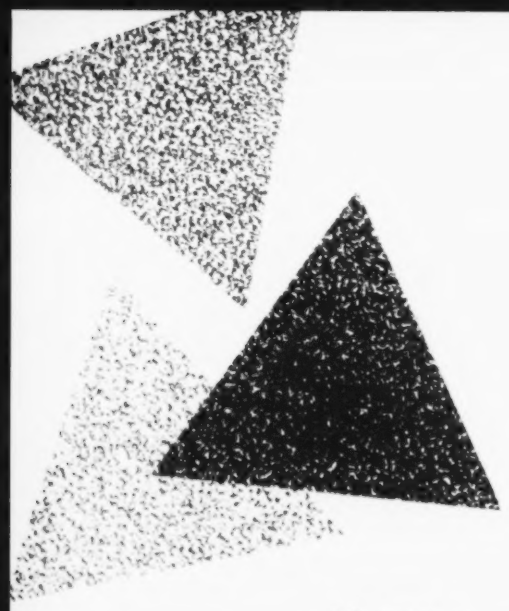
RATIONALE:

The technology offers some unique observation options. All parties involved should understand the accepted procedure for formal observation.

Establish procedures to improve communication among teachers, students, schools and communities involved in the cooperative.

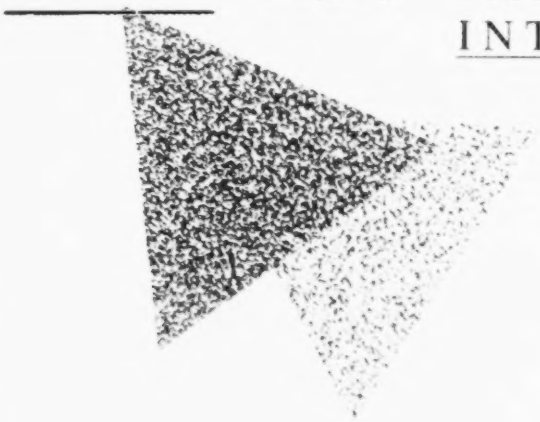
RATIONALE:

Understanding and support will foster positive involvement and growth.



Chapter 3

IMPLEMENTING INTERACTIVE TELEVISION



•*Instruction*

INSTRUCTION

Provide appropriate and sufficient support staff, whose duties may include proctoring tests, clerical tasks, discipline enforcement, technical support and repairs or providing project direction.

SUGGESTIONS:

A. Trained substitutes should be available.

B. People who can repair, maintain or replace equipment should be available as necessary.

RATIONALE:

The management of students and materials at more than one school site may require additional support service for the teacher to maintain the quality of instruction.

The technology may malfunction at some time, requiring appropriate technical support.

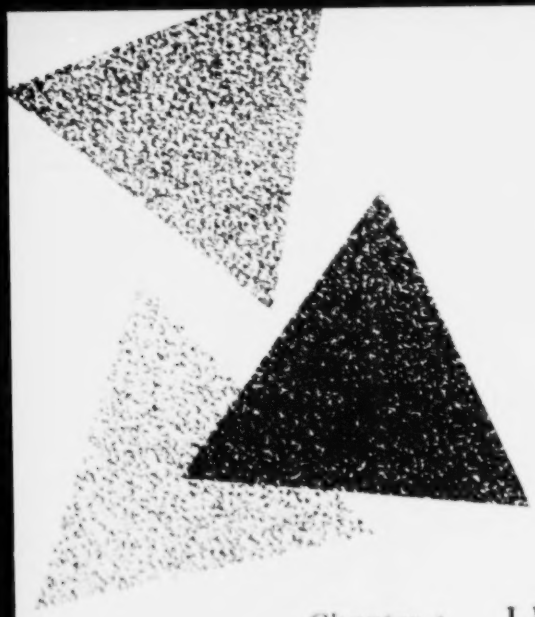
Schedule extra teacher preparation time for effective use of interactive television.

SUGGESTIONS:

Provide preparation time as required. One additional preparation hour for interactive television is recommended. Provide curriculum writing/revision time as required.

RATIONALE:

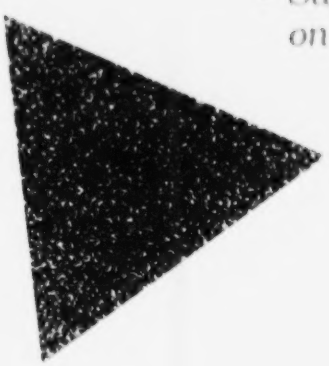
Interactive television teaching requires additional planning and preparation time because of the technology and the geographic separation of students.



Chapter 4

IMPLEMENTING INTERACTIVE TELEVISION

- *Suggestions for Teaching on an Interactive System*



SUGGESTIONS FOR TEACHING ON AN INTERACTIVE TELEVISION SYSTEM

SUGGESTIONS:

A. Avoid using white paper for note giving, as it tends to create glare and video noise.

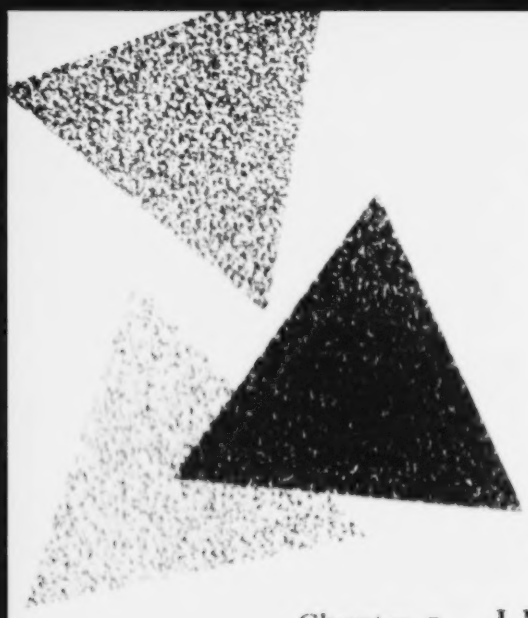
B. Avoid writing notes too close to the margins of the paper.

C. Make an effort to involve host site and remote site students equally in all interaction (e.g., eye contact, questions, answers, social expression).

D. Identify limitations of the cameras and monitors in the classroom. Adjust teaching style as necessary.

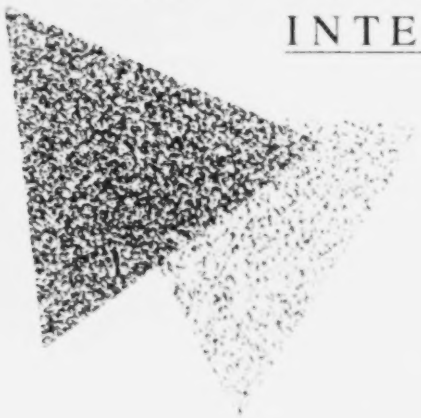
E. If the system goes down, continue teaching and use the VCR to tape and send tapes to remote sites.

F. Use a variety of presentation techniques when presenting lessons on interactive television.

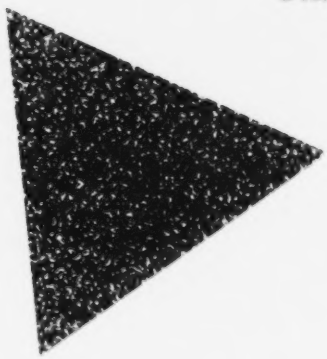


Chapter 5

IMPLEMENTING INTERACTIVE TELEVISION



•*Classroom Equipment*



CLASSROOM EQUIPMENT

Interactive television instruction relies heavily on extremely sophisticated and complicated technical equipment. In view of this, the committee presented the following suggestions and rationales:

Install or make some standard items available through the media center.

SUGGESTIONS:

A. Good quality recorders/players for use of audio tapes and recording should be connected directly to the system as required.

B. Computers for use of software.

C. Rear screen projectors or a portable screen for slides and filmstrips.

D. Film chain to adapt visual materials to a television format.

Provide classroom telephones, preferably with a direct line out of the building.

RATIONALE:

Allows the teacher to maintain student contact during system failure.

Allows the teacher and student an opportunity to carry on a semi-private conversation as necessary without losing visual and audio contact with the remote or host site students.

Allows the teacher, facilitator or technician the ability to communicate between classroom sites to correct system problems.

Allows the teacher a direct link to a remote site to alert the school to a discipline problem in the remote classroom.

Install videocassette recorders.

RATIONALE:

Allows the teacher to play back videotapes germane to the subject matter.

Allows the teacher to videotape class sessions for use by students absent from class.

Allows the teacher to easily videotape "special" presentations for use in future years of teaching.

Allows the taping of any remote site behavior that may be distracting or inappropriate.

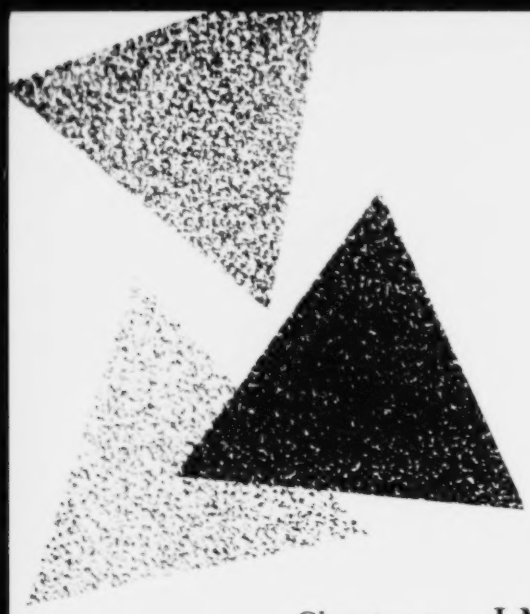
Allows the teacher to videotape his or her teaching and review it.

Facsimile machines are strongly recommended additions to the classroom.

RATIONALE:

Allows the teacher or student to transmit hard paper copy of material between remote locations in 30 seconds.

Allows immediate feedback for tests or corrected assignments.



Chapter 6

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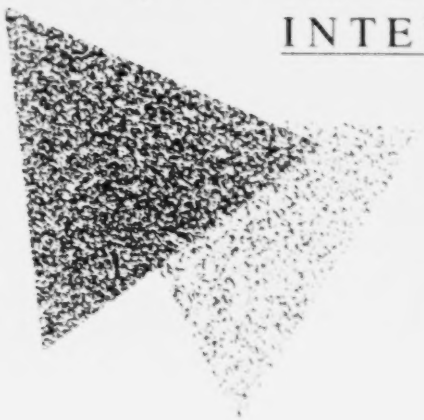
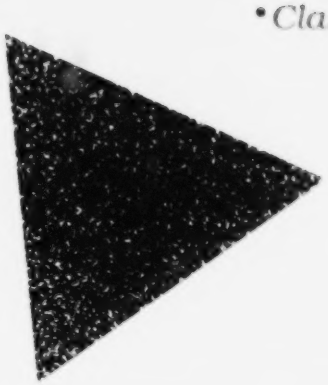


• *Classroom Design*



CLASSROOM DESIGN

Classroom design is a slowly evolving attempt to meet teacher and student needs. In view of this, the committee offered the following suggestions and rationales:

Standardize classroom equipment and installation.

RATIONALE:

Allows the teacher to teach from any classroom without making adjustments.

Allows the schools involved with the project to maintain a minimum inventory of backup equipment when breakdowns occur. If the equipment is the same from school to school, the defective component can quickly and easily be exchanged with the spare unit.

Allows the teacher or technician to verbally instruct students to correct or adjust equipment via the telephone or interactive system, since he or she is familiar with the equipment at all sites.

The student camera should be movable.

SUGGESTIONS:

A. Equip student camera with a tripod and dolly.

RATIONALE:

Demonstrations or special presentations can be transmitted to remote sites by simply changing the location or position of the camera.

The teacher can "personalize" the classroom to some extent as long as the basic layout is not disturbed.

RATIONALE:

This will allow the flexibility necessary to meet individual teacher needs.

Install an overhead camera at teacher's station.

RATIONALE:

A. Transmits written and graphic information at each site.

B. Can be used by both teachers and students.

Other desirable classroom features.

SUGGESTIONS:

A. Acoustic treatment (carpet, curtains, tile)

B. Air conditioning

C. Risers for students (to improve visibility)

D. Large screen monitors (25")

E. Minimal cable chaos on the floor

F. Comfortable seating for students and teacher

G. Remote zoom and auto focus on cameras

H. Wireless teacher microphone